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| 09/176,639 | 10/20/1998 | RICHARD ROBERT SCHEDIWY | 028.1108 | 2112 |

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| EXAMINER |
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KUMAR, SRILAKSHMI K

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| ART UNIT | PAPER NUMBER |
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2675

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/176,639

Applicant(s)

SCHEDIWY ET AL

Examiner

Srilakshmi K. Kumar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16,21-40,42-50 and 52-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 63 is/are allowed.
- 6) ☒ Claim(s) 16,21-23,25-40,42-50 and 52-62 is/are rejected.
- 7) ☒ Claim(s) 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following office action is in response to the Pre-Appeal Conference filed, July 22, 2005. Prosecution has been reopened, and the finality of the previous office action has been withdrawn. Claims 16,21-40,42-50 and 52-63 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16, 21-23, 25, 27-36, 37-40, 42-50, 52-59, 60-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grabner et al (US 4,731,694) in view of Miller et al (US 5,374,787) and further, in view of Greanias et al (US 5,386,219)

As to independent claims 16 and 37, Grabner et al disclose a touch pad system comprising, a sensor layer (Fig. 1, items 7 and 8), an insulative layer, (Fig. 1, item 24) (col. 3, lines 20-22, 31-61 and col. 4, lines 26-30). In a special embodiment of the touch pad, the insulative layer 24 also comprises a metallized layer as a conductor on upper flat surface. It would have been obvious that this extra layer shows the three layers of the touch pad with the sensor layer on the bottom, the insulative layer on top of the sensor layer and the conductive layer on top of the insulative layer. This order could be advantageous as to have better touch detection.

Grabner et al do not disclose where said touch layer having a conductivity selected to create an image of a conductive object that is larger than an area of contact of said conductive object, and wherein said sensor layer capacitively detects the image of said conductive object when a user places a conductive object proximate said touch layer.

Miller et al disclose in col. 8, line 58-col.9, line 25 where said touch layer having a conductivity selected to create an image of a conductive object that is larger than an area of contact of said conductive object. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

Grabner et al and Miller et al do not disclose wherein said sensor layer capacitively detects the image of said conductive object when a user places a conductive object proximate said touch layer.

Greanias et al disclose wherein said sensor layer capacitively detects the image of said conductive object when a user places a conductive object proximate said touch layer in col. 7, lines 14-23 and col. 8, lines 19-50. It would have been obvious to one of ordinary skill in the art to incorporate wherein the sensor layer capacitively detects the image of said conductive object when a user places a conductive object proximate said touch layer as shown by Greanias into that of Grabner et al. The feature of capacitive detection is advantageous as disclosed by Greanias in col. 3, lines 25-37 as it improves the accuracy of determining the position of the touch.

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As to independent claims 42 and 52, limitations of claims 16 and 37, and further comprising, Grabner and Miller do not explicitly disclose a wherein said conductive touch layer configured to produce a visual mark of the conductive object contacting said conductive touch layer for providing visual feedback to the user. It would have been obvious to one of ordinary skill in the art that a visual mark would be present as systems disclosed by Grabner and Miller disclose touch/stylus input and further, it is well known in the art that touch input systems such as personal digital assistants show visual marks.

As to dependent claims 21-23, 53 see limitations of claims 16, 37, and 52 above.

As to dependent claims 25, 54 and 62, limitations of claims 16 and 52 and further comprising, Grabner et al do not disclose the feature of a plastic carrier. Miller et al disclose a plastic carrier in col. 8, lines 8-57. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claim 27, limitations of claim 16, and further comprising, Grabner et al disclose wherein said insulative layer, said touch layer and said sensor layer are transparent (col. 3, lines 20-22, 31-61 and col. 4, lines 26-30).

As to dependent claims 28 and 56, limitations of claim 27, and further comprising, Grabner et al do not disclose wherein a display in operative communication below said sensor layer and where said display configured to be viewable through said sensor layer, insulative layer

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and touch layer. Miller et al disclose in col. 1, lines 36-49, col. 4, lines 12-28 where there is a display below the sensor layer. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claim 29, limitations of claim 28, and further comprising, Grabner and Miller et al do not explicitly disclose a visual mark feedback. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claim 30, see limitations of claims 16, 37 and 51, above.

As to dependent claim 31, limitations of claim 16, and further comprising, wherein said Grabner et al do not explicitly disclose the feature of where the conductive object comprises one of metal and conductive plastic. Miller discloses where the conductive object comprises one of metal and conductive plastic in col. 8, lines 8-col. 9, line 25. It would have been obvious to one of ordinary skill in the art that the conductive object comprises one of metal and conductive plastic as such materials are required in order to effectively use the conductive object on the touch pad system. It would have been obvious to one of ordinary skill in the art to incorporate

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the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claim 32, limitations of claim 16, and further comprising, Grabner et al and Miller et al do not disclose where a conductive tip is selected from the group consisting of a wide stylus, a ball of conductive foam, and a circular metal plate with a ball joint, however the Examiner takes Official Notice, as the limitation of different conductive tips is well known in the art. It would have been obvious to one of ordinary skill in the art to incorporate the feature into that of Grabner et al as different conductive tips enable the user to create different images.

As to dependent claim 33, limitations of claim 16, and further comprising, Grabner et al and Miller et al do not disclose where a conductive object comprises a fine tipped conductive pen, however the Examiner takes Official Notice, as the limitation of a fine tipped conductive pen is well known in the art. It would have been obvious to one of ordinary skill in the art to incorporate the feature into that of Grabner et al as is disclosed by personal digital assistants with pen stylus as the fine tip is advantageous as it enables for precision.

As to dependent claims 34 and 57, limitations of claims 16 and 52, and further comprising, Grabner et al and Miller et al do not disclose the feature of a bezel. Greanias et al disclose the feature of a bezel to prevent edge distortion in col. 5, lines 48-63. It would have been obvious to one of ordinary skill in the art to combine the system of Grabner et al with that of Greanias et al as they both disclose a touch panel with sensor, insulative and conductive layers

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where a finger or stylus may be used. The bezel of Greanias et al well known in the art as it protects the edges of the display.

As to dependent claims 35, 36, 58 and 59, limitations of claims 16 and 52, and further comprising, Grabner et al, Miller et al and Greanias et al do not disclose the feature of compensating edge distortion by calibration means, however the Examiner takes Official Notice, as the limitation of compensating edge distortion by calibration means is well known in the art. It would have been obvious to one of ordinary skill in the art to incorporate the feature into that of Grabner et al as compensating for edge distortion increases the viewing and touching area of the display.

As to dependent claim 38, see limitations of claims 16, 37 and 52, above.

As to dependent claims 39, 40 and 60, limitations of claims 37 and 52 and further comprising, Grabner et al and Miller et al do not disclose wherein said means for distinguishing an identity of said conductive object comprises a means based on the detected change in capacitance, wherein said detected change in capacitance is variable over a time period for a finger proximate said conductive touch layer and said detected change in capacitance is substantially constant over a time period for a stylus contacting said conductive touch layer. Greanias et al disclose wherein said means for distinguishing an identity of said conductive object comprises a means based on the detected change in capacitance, wherein said detected change in capacitance is variable over a time period for a finger proximate said conductive touch layer and said detected change in capacitance is substantially constant over a time period for a stylus contacting said conductive touch layer in col. 7, lines 14-23 and col. 8, lines 19-50. It would have been obvious to one of ordinary skill in the art to incorporate wherein said means for

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distinguishing an identity of said conductive object comprises a means based on the detected change in capacitance as shown by Greanias into that of Grabner et al. The feature of capacitive detection is advantageous as disclosed by Greanias in col. 3, lines 25-37 as it improves the accuracy of determining the position of the touch.

As to dependent claims 43 and 44, see limitations of claim 42, above.

As to dependent claims 45 and 61, limitations of claims 42 and 52, and further comprising, Grabner et al and Miller et al do not disclose the feature said visual mark is an alteration in at least one of color and reflectivity produced by mechanical contact of said conductive object with said conductive layer, however the Examiner takes Official Notice, as the limitation of said visual mark is an alteration in at least one of color and reflectivity produced by mechanical contact of said conductive object with said conductive layer is well known in the art as the alteration of color produces an image. It would have been obvious to one of ordinary skill in the art to incorporate the feature of a visual mark into Grabner et al as the visual mark would disclose the area in which the user has selected or written.

As to dependent claim 46, limitations of claim 42, and further comprising, Grabner et al and Miller et al do not disclose the feature of where the visual mark is produced by a sacrificial material on a tip of said conductive object, however the Examiner takes Official Notice, as the limitation of where the visual mark is produced by a sacrificial material on a tip of said conductive object is well known in the art. It would have been obvious to one of ordinary skill in the art to incorporate the feature of a visual mark into Grabner et al as the visual mark would disclose the area in which the user has selected or written.

As to dependent claim 47, limitations of claim 46, Grabner et al and Miller et al do not disclose the feature of where sacrificial material is pencil graphite, however the Examiner takes Official Notice, as the limitation of where sacrificial material is pencil graphite is well known in the art. It would have been obvious to one of ordinary skill in the art to incorporate the feature of a visual mark into Grabner et al as the visual mark would disclose the area in which the user has selected or written.

As to dependent claim 48, limitations of claim 42, and further comprising, Grabner et al do not disclose wherein said visual mark is produced by a groove in a surface of said conductive layer in response to mechanical contact of said conductive object with said conductive layer, wherein said surface of said conductive layer comprises a pliant material. Miller et al disclose visual mark is produced by a groove in a surface of said conductive layer in response to mechanical contact of said conductive object with said conductive layer, wherein said surface of said conductive layer comprises a pliant material as is shown in Fig. 4. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claim 49, limitations of claim 42, and further comprising, Grabner et al and Miller et al do not disclose where the visual mark is removable, however the Examiner takes Official Notice, as the limitation of where the visual mark is removable is well known in the art. It would have been obvious to one of ordinary skill in the art of to incorporate where the visual

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mark is removable into Grabner et al as is shown by personal digital assistants where the written marks are erasable to enable the user to change content.

As to dependent claim 50, limitations of claim 42, and further comprising, Grabner et al and Miller et al do not disclose where visual mark is produced by a layer of liquid crystal material coupled to said conductive layer in response to mechanical contact of said conductive object with said conductive layer, however the Examiner takes Official Notice, as the limitation of where visual mark is produced by a layer of liquid crystal material coupled to said conductive layer in response to mechanical contact of said conductive object with said conductive layer is well known in the art. It would have been obvious to one of ordinary skill in the art to incorporate where the visual mark is produced by liquid crystal material into that of Grabner et al as displays taught by personal digital assistants are liquid crystal displays.

3. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grabner et al in view of Miller et al in view of Greanias and further in view of DePalma et al. (US 5,558,977).

As to dependent claim 26, limitations of claim 16, and further comprising, Grabner, Miller, and Greanias et al do not disclose where the conductive material comprises carbon powder. DePalma et al discloses transparent conductive layer. In col. 2, lines 39-46 DePalma et al disclose where conductive layers have been described to contain conductive carbon particles. Further DePalma et al disclose in col. 11, lines 13-24 where these conductive layers are used in touch panels and liquid crystal displays. It would have been obvious to one of ordinary skill in the art to combine the system of Grabner et al with that of DePalma et al as DePalma et al disclose the composition of a conductive layer used in touch panels and liquid crystal displays. The addition of a conductive carbon in the conductive layer is advantageous as it would be an

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antistatic system which is one where the electrostatic charge can be dissipated as is advantageous as it reduces irregular fog patterns and provides a high degree of transparency as is disclosed in col. 1, lines 29-37 and col. 5, lines 26-40.

Allowable Subject Matter

4. Claim 63 is allowed.

5. Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: With respect to claims 24 and 63, the prior art of record do not disclose wherein the conductivity of said touch layer is configured to limit the size of said image to approximately four times the area of contact of said conductive object.

Response to Arguments

7. Applicant's arguments, see Pre Appeal Brief, filed July 22, 2005, with respect to the rejection(s) of claim(s) 16, 21-23, 25, 27-36, 37-40, 42-50, 52-59, 60-62 under Grabner et al in view of Miller et al have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Grabner et al in view of Miller et al and further in view of Greanias et al.

With respect to applicants arguments in regards to the limitation of Grabner et al in view of Miller et al do not disclose the touch layer having a conductivity selected to create an electrical image of a conductive object that is larger than an area of contact of said conductive object contacting said touch layer, Examiner agrees. As is disclosed above in the new rejection,

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Greanias et al disclose wherein said sensor layer capacitively detects the image of said conductive object when a user places a conductive object proximate said touch layer in col. 7, lines 14-23 and col. 8, lines 19-50. It would have been obvious to one of ordinary skill in the art to incorporate wherein the sensor layer capacitively detects the image of said conductive object when a user places a conductive object proximate said touch layer as shown by Greanias into that of Grabner et al. The feature of capacitive detection is advantageous as disclosed by Greanias in col. 3, lines 25-37 as it improves the accuracy of determining the position of the touch.

8. Applicant's arguments filed in the Pre Appeal Brief, on July 22, 2005 have been fully considered but they are not persuasive.

Applicant argues where Miller does not teach creating an image larger than an area of contact. Examiner disagrees. In the claim limitation "creating an image larger than an area of contact", the Miller reference teaches where the image corresponds to the outline of the finger. In the broadest interpretation of the limitation "creating an image larger than an area of contact" is shown by the outline of the finger, as the outline of the finger is an area larger than the finger.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 571 272 7769. The examiner can normally be reached on 10:00 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571 272 3638. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Srilakshmi K. Kumar
Examiner
Art Unit 2675

SKK
December 10, 2005



KENT CHANG
PRIMARY EXAMINER